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*Strategic Voting in Britain**

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Formal political theory has raised serious doubts about the existence of strategic voting, and this in turn has challenged the prevailing wisdom in comparative politics about phenomena like "squeezing" and the effect of the "wasted vote." This paper attempts to set out the conditions for strategic voting and to test for it using data from the 1970 British General election. The results from both an aggregate and a survey analysis indicate that individuals are more likely to vote for their second preference when they perceive that their first choice has little chance of winning. This effect is particularly strong when the next best party is at a margin of under five percent.

Much of the past controversy over competing rational models has focused on the decision to vote per se, but recently political scientists have become more interested in the phenomenon of strategic or tactical voting Formal political theory admits the possibility of strategic voting (Farquharson, 1969), but doubts its existence in large group situations (Ferejohn and Fiorina, 1974). It is argued that the impact of any one individual's strategy on the outcome of an election in a large group is thought to be so small as to reduce substantially the incentive to behave that way. If this argument is correct, it undermines several fundamental beliefs in comparative political science. This paper will (1) examine the relation between those fundamental beliefs and competing rational decision rules, and (2) conduct two empirical tests of strategic voting in Britain. Since modelling the psychology of strategic voting is a difficult task with severe measurement problems, the tests are conducted with both aggregate and survey data. The argument is that while either test by itself has deficiencies, the consistency of the findings from both presents a strong case for the expected utility hypothesis.

Two Strategic Voting Phenomena

Two phenomena in comparative political science can be characterized as examples of strategic voting. The first is the third party "squeeze." The term "squeezing" refers to the flow of third party support to one of the other two parties when the race is close between those two but not the

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third. This behavior has been studied in Britain in three-way races involving the Liberals by both the British press(*Economist*, 1974) and political scientists (Shively, 1970; Spafford, 1972). Duff Spafford's findings are particularly interesting since he examines a period of Liberal revival—i.e., 1964–66. In 1964, the Liberals increased their share of the vote from 5.9 percent to 11.2 percent and their share of the seats from six to nine. Curiously, the Liberals in the 1966 election dropped in their share of the total vote to 8.5 percent, but increased their number of seats to twelve. In part, the drop in the share of the vote can be explained by a decrease in the number of candidates the Liberals put forward, but the increase in seats seems to have occurred where the Liberals were not squeezed by a close race between the Labour and Conservative parties. As evidence of this, Spafford regresses the Liberal vote in 1966 on the Liberal vote in 1964 and the share of the vote of the winning party in each constituency in 1964. He thereby shows that the Liberals gained in 1966 in those areas where they had done well in 1964 and where the race was not close between the major parties. In short, Spafford clearly demonstrates the dependence of Liberal fortunes on squeezing behavior by the British electorate. If squeezing exists, it implies that some voters are acting strategically by foregoing support for their most preferred alternative when it has little chance of winning in order to cast a vote for a less preferred alternative with a better chance of winning.

A phenomenon closely related to the squeeze is the "wasted vote." The "wasted vote" derives from the objective discrimination of single member simple plurality electoral system toward nationally based minor parties, and the resulting psychological belief that a vote for a third party under such conditions would be wasted (Duverger, 1951; Rae, 1967). The concept of the wasted vote provides an institutional explanation for the two party configurations found in Anglo-American democracies like Britain and the United States and for the multiparty configurations in countries that employ some form of proportional representation. Like the "squeeze," the "wasted vote" phenomenon depends on the voter's perception of the likely outcome and the reasonableness of certain choices based on those expectations. In this sense, it too implies strategic behavior on the part of the voter.

Modelling Strategic Voting Within an Expected Utility Framework

Most empirical studies of squeezing and the wasted vote do not develop an explicit model of the process of choice which would generate such behavior. This is unfortunate since the absence of such a model makes it difficult to generate testable predictions and to know what form a speci-

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fication of tactical voting ought to take. Moreover, most theoretical discussions have concentrated on the two-party case only; hence, it is necessary to expand the expected utility model to the three-party case before any empirical work can be considered.

The expected utility of a vote for an individual's first preference will be

$$EU(V_1) = q(u_1) + t(u_2) + (1 - q - t)(u_3) - c$$

where q, t, and $(1 - q - t)$ are the perceived conditional probabilities that an individual's first, second, and third party preferences respectively will be elected given that this individual votes sincerely (i.e., for his/her first preference).[1] The terms u_1, u_2, and u_3 are the utilities associated with the first, second, and third preferences, while c simply represents the cost of voting. Similarly, the expected utility of voting strategically (i.e., for the second preference) will be

$$EU(V_2) = q'(u_1) + t'(u_2) + (1 - q' - t')(u_3) - c$$

where q', t' and $(1 - q' - t')$ are the altered perceived probabilities given that an individual votes this time for his/her second preference. The expected utility of voting sincerely as opposed to strategically is the difference in the two expressions.

$$\begin{aligned} EU(V_1) - EU(V_2) &= [q(u_1) + t(u_2) + (1 - q - t)(u_3)] \\ &\quad - [q'(u_1) + t'(u_2) + (1 - q' - t')(u_3)] \\ &= (q - q')(u_1 - u_3) + (t - t')(u_2 - u_3) \end{aligned}$$

where the terms $(q - q')$ and $(t - t')$ are the differences in the perceived probabilities of an individual's first and second preferences winning as the result of voting sincerely rather than strategically. Both will depend on the closeness of the race between the parties in that constituency; that is, the value of a switch to a sincere as opposed to a strategic vote will depend on the likelihood that the vote will be decisive (i.e., affect the outcome). Thus the value of $(q - q')$ will vary with the closeness of the race for an individual's first preference—p_1—and the value of $(t - t')$ will vary with the closeness of the race for an individual's second preference—p_2. Substitut-

[1] The basic two-party expected utility model can be found in Riker and Ordeshook, 1968.

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ing the p_1 and p_2 terms, we get an expression similar to the familiar two-party *PB* model

$$EU(V_1) = EU(V_2) = p_1 (u_1 - u_3) - p_2(u_2 - u_3).$$

The negative sign in front of p_2 is due to the fact that $t < t'$ even if by some very small number. The proposed formulation suggests that an individual will vote sincerely when $EU(V_1) - EU(V_2) > 0$ and strategically when $EU(V_1) - EU(V_2) < 0$.

This model can easily be extended to predict when an individual would vote sincerely or strategically rather than abstain. This is important since the voter actually has three choices; namely, to vote sincerely, vote strategically, or abstain. If the perceived probabilities of various outcomes contingent on abstention are called q'', t'', and $(1 - q'' - t'')$, then we get two expressions similar to the first

$$EU(V_1) - EU(\text{Abst.}) = (q - q'')(u_1 - u_3) + (t - t'')(u_2 - u_3) - c$$

$$EU(V_2) - EU(\text{Abst.}) = (q' - q'')(u_1 - u_3) + (t' - t'')(u_2 - u_3) - c$$

An important characteristic of these two expressions is that the expected value of voting either sincerely or strategically rather than abstaining must be greater than the cost of voting. Hence, if we make the simplifying assumption that $(q - q')$, $(q - q'')$, and $(q' - q'')$ all depend on the same margin of competitiveness p_1 and similarly that $(t - t')$, $(t - t')$, $(t - t'')$ all depend on p_2, then we can use the terms p_1 and p_2 to predict that an individual will vote sincerely rather than abstain when $p_1(u_1 - u_3) - p_2(u_2 - u_3) > c$ and will vote strategically rather than abstain when $p_2 (u_2 - u_3) - p_1(u_1 - u_3) > c$. If the expected utility of both alternatives is less than the cost of voting, then the voter will abstain.

Bearing in mind that it is difficult to separate the interacting effects in this model, it seems to be true that strategic voting results when individuals perceive that their second preference has a better chance of winning than first, and when the utility differences between their first and second preferences are small. As the utility difference between the first and second preferences increases and as the closeness of the race increases for the first preference, then the probability of voting sincerely will increase. In this model abstainers will be individuals who perceive that they cannot alter the outcome for either preference and who see small differences in the utility of the competing parties.

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A more sophisticated three-party model has been proposed by Ferejohn and Fiorina (1974). They assign probabilities over nineteen possible situation states—for example, one such state might be that a clear winner C_1 exists and one vote cannot change the outcome. Normalizing the utility so that $u_1 = 1$, $u_2 = k$, and $u_3 = 0$, they obtain more complicated expressions of the expected utility of various act alternatives. The difficulty with the Ferejohn-Fiorina formulation as a guide to possible estimations of strategic voting is that it requires separate measures of the probabilities associated with these nineteen states. The simple model is preferred here because it is more empirically feasible: it simply lumps together the various probabilities of a narrow winner, a two-way tie, a three-way tie, etc. and suggests that the value of a vote increases as the race gets closer.

Tactical Voting and Alternative Decision Rules

The debate between minimax regret and expected utility is now too familiar to warrant extended description (Beck, 1975; Ferejohn and Fiorina, 1974; Mayer, 1974; Stephens, 1975; Tullock, 1975). One facet of the controversy which has received less attention is the proposition that strategic voting "is never minimax regret optimal" (Ferejohn and Fiorina, 1974, p, 534). Ferejohn and Fiorina show that whenever the utility k of a second preference is less than that of the first (i.e., $k < 1$ in their normalized notation) the maximum regret of V_1 will always be less than that of V_2. This amounts to saying that if individuals have no knowledge of the likely outcome, then there is no incentive to choose an outcome other than the most preferred. Hence, if voters employ a minimax regret decision rule, we should not observe tactical voting in the electorate. As Ferejohn and Fiorina themselves put it, "this conclusion affords the possibility of a critical test between minimax regret and maximizing expected utility criteria" (Ferejohn and Fiorina, 1974, p. 534).

As importantly, from the perspective of comparative politics, if we find no evidence of strategic calculations in the electorate, then we must seriously question conventional explanations of squeezing and the wasted vote. The traditional observations that support for a minor party will be squeezed by people's low expectations of victory and that minor party votes are wasted imply that expected outcomes influence voter choices. If voters' expectations do not influence their choices, then either some other explanation must account for this behavior, or we have misinterpreted these two phenomena. The purpose of the tests which follow is to show that voters choose strategically in the sense that perceptions of the likely outcome do alter their decisions. In this way, I hope to show that (1) voters are ex-

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pected utility maximizers and not minimax regreters, and (2) that conventional explanations of the squeeze and the wasted vote are valid.

An Aggregate Data Test

The first test of tactical voting uses aggregate election data from a sample of British constituencies in 1970.[2] The underlying idea behind this test is that if the proposed model of behavior is correct, then it should be possible to observe predictable relations in the data. The point of this exercise then *is not to obtain structural estimates of the causal relations* between the observed variables, but simply to show that the statistical associations of abstention, closeness of the race, and third-party vote are consistent with the model.

Previous aggregate tests have examined the effect of the closeness of the race on changes in the third-party vote over time. However, concepts like *wasted vote* also suggest that the cumulative effect of strategic considerations may be to suppress the entry and encroachment of a third party in particular constituencies (or systems) and permit growth in others. By this reasoning, we would expect the level of third-party support to be lower in competitive (i.e. closely contested) than in noncompetitive constituencies (i.e. one-party dominant), since the pressure to defect and cast a meaningful vote will be greater in constituencies with close races. At the same time, we would expect the third-party vote to be inversely related to abstention since some potential third-party supporters will prefer to abstain rather than support a losing cause. The proposed specification thus regresses the percentage of the third-party vote in a constituency on the margin between the winner and the runner-up and the percentage of voters abstaining in that constituency.

$$TPV\% = B_1 + B_2C + B_3A + u$$

where: $TPV\%$ is the percentage of the third-party vote in a constituency;
C is the difference between the percentage of the vote taken by the party in first place minus the percentage of the vote taken by the party in second place in a constituency;
A is the percentage of the eligible electorate abstaining in a constituency.

[2] The sample of constituencies is that used by Butler and Stokes, 1968. The data can be found in Butler and Pinto-Duschinsky, 1971, or *Times Guide*, 1974.

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The expectation is that in constituencies where the race is closer between the winner and the runnerup, the percentage of the vote received by the third party ought to decrease. Therefore, the sign of the coefficient on C should be positive since a smaller margin between the winner and the runnerup will produce a smaller third-party vote and a larger margin will produce a larger third-party vote. On the other hand, the sign of the coefficient for A should be negative since the size of the third-party voters will vary inversely with the number who decide that it is not worthwhile to vote either sincerely or strategically—i.e. the number of individuals who decide to abstain.

The results from the estimations in Table 1 seem to confirm the expectation that the number of third-party supporters will be inversely related to the competitiveness of the constituency and to the number of abstainers in a constituency as indicated by the fact that the coefficient on the closeness of the race variable is significant and positive. These associations are compatible with the model developed in this paper. However, to estimate more specifically why a particular individual would abstain, vote sincerely, or vote strategically, we must resort to a test with survey data.

TABLE 1

A Test of the Aggregate Relations Between Third Party Vote, Abstention, and Closeness of the Race: 1970 (OLS)

Variable	Coefficient	F-Test for Coefficients
Abstention	−.48	15.03
	(.14)	
Closeness	.15	11.92
	(.04)	
Constant	22.19	
$R^2 = .34$		
SEE = 3.51		
F for whole equation = 10.69		

Standard errors of coefficients in parentheses.

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A Survey Test of Strategic Voting

The object of this test is to use survey information about individual preferences, expectations, and voting behavior to construct an equation which predicts the probabilities of the three voting choices for any one individual.[3] The proposed specification is

$$V = B_1 + B_2(P_1U_1 - P_2U_2) + B_3U_1 + B_4(U_1 - U_2) + B_5D + u$$

where V = the three voting alternatives—i.e., abstain, vote sincerely, vote strategically;
P_1, P_2 = the closeness of the race for the first and second preferences;
U_1, U_2 = the utility of the first and second preferences as measured by the feeling thermometer scores
D = the participation index score.

V in this equation is whether the respondent voted for his first preference, second preference, or abstained. The order of partisan preference is defined as the ranking of the feeling thermometers assigned to the various parties by each individual. Hence, if an individual gave the Labour party a score of 80, the Liberals a score of 50 and the Conservatives a score of 30, then the first preference of that individual is the Labour party, the second is the Liberal party, and the third is the Conservative party. Voting for one's first preference is then defined as casting a vote for the party with the highest feeling thermometer score, voting for one's second preference is voting for the party with the second highest feeling thermometer score, and abstention is of course simply not voting.

The breakdown, as defined, of sincere voters, strategic voters, and abstainers for the Butler-Stokes 1970 sample for which these equations are estimated is as follows:

	Sincere	Strategic	Abstainer
Absolute Frequency	694	158	232
Percentage	64.0%	14.6%	21.4%

Valid Observations 1084

Quite plausibly, the number of sincere voters exceeds both the number of strategic voters and abstainers. The 21.4 percent abstention rate is slightly lower than the abstention rate across the actual electorate in 1970 (i.e., 28

[3] The survey data come from the 1969–1970 panel used in Butler and Stokes, 1968, second edition.

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percent). The number of strategic voters is perhaps larger than anticipated, but this can be accounted for by the fact that it was necessary to assign a ranking to equal feeling thermometer scores. In approximately 10 percent of the cases, the feeling thermometers are tied and must be arbitrarily designated first or second preference. Excluding the ties, the amount of strategic voting is about 9 percent. It is argued that the arbitrary assignment of first and second preference designations in the cases of ties should not distort or bias the estimations in favor of the expected utility hypothesis.

Since the Butler and Stokes panel study gives us no direct measure of the closeness of the race, it is necessary to find a surrogate measure. The proxies I propose for P_1 and P_2 are constructed from the actual constituency results on the assumption that they capture with some random measurement error people's expectations of the eventual outcome. Thus, P_1 is the difference between the percentage of votes received by the respondent's most preferred party and that received by the eventual winner in the constituency. If the respondent's most preferred party was the eventual winner, then P_1 is the difference between what the most preferred party obtained and what the runnerup party received. The same procedure was repeated to get P_2. Since the model requires that P increases as the race gets closer, the variables P_1, P_2 are transformed so that P gets larger as the actual margin of contention gets smaller.[4]

The U_1 and U_2 terms are simply the feeling thermometers of the first and second preferences respectively. The particular specification of the expected utility variable—$(P_1U_1 - P_2U_2)$—derives from the theoretical model described earlier except that the U_3 terms have been dropped. The prediction is that when $P_1U_1 > P_2U_2$, the individual will vote sincerely, and when $P_1U_1 < P_2U_2$, the individual will vote strategically. The inclusion of U_1 as a separate variable in the equation is intended as a test of a competing hypothesis about abstention—the alienation hypothesis (Riker and Ordeshook, 1966). As individuals feel more positively about the alternatives they face, this should be reflected in higher values of the first preference feeling thermometer scores. The point here is that while the voter may perceive relative differences between the parties, the best of them may still be lowly assessed. For example, it is easy to imagine that members of the British Communist party would prefer the Labour party to any other outside of the CPGB, but that the utility derived from Labour policies might well be judged insufficient to motivate these individuals to vote for Labour. The prediction then is that the probability of abstention will in-

[4] P actually is 1/margin of contention.

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crease as U_1 decreases and the probability of voting will increase as U_1 increases. The third variable in the equation is the difference in the feeling thermometers of the first and second preferences. The inclusion of this variable is intended as a test of the indifference hypothesis: namely, that as individuals become more indifferent between their first two choices, the probability of voting for the second preference will increase. Since the utility terms are not multiplied by a measure of the expected outcome, the indifference measure has been used by others as a proxy for the minimax regret hypothesis (Ferejohn and Fiorina, 1975).

While the primary interest is in the expected utility term of the equation, an attempt was made to hold constant the effects of participation utilities and costs. The measure for participation utilities in these equations is a summary index of the ways in which the respondent was involved in the campaign. Included in the index are whether the respondent followed the campaign on television, whether the respondent followed the campaign in the newspapers, whether the respondent attended any political meetings and whether the respondent talked to others about the campaign. This variable is far from ideal, but it is the best data permits. It was not possible, on the other hand, to obtain a plausible measure of costs so that it was omitted from the equation.

One estimation strategy would involve using OLS where the dependent variables are three dummies with 1 indicating that the individual voted sincerely, strategically, or abstained and 0 representing all other outcomes. The OLS procedure, however, has several very important shortcomings. First, a true voting model ought to give us probabilities for alternative events under different conditions, and show how changes in these conditions affect the relative probabilities. If the true cumulative function is nonlinear (which is likely), and a linear probability model is estimated instead, it can be shown that errors in the linear model will not be independent of the values of the exogenous explanatory variables.[5] Further, all outcomes cannot be estimated in the same model, and the predicted scores of these three OLS equations will not necessarily sum to 1. The true model requires a procedure that will give us information about the joint occurrence of more than one discrete event when the event categories cannot be forced into any plausible order or metric.

For these reasons, the basic model was estimated with a maximum

[5] See especially Jackson and Hanushek, 1977. See also Nerlove and Press, 1973; Theil, 1970; 1971, pp. 628–36.

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likelihood logit procedure. The probability of $Y_t = 1$ is expressed as a nonlinear function of the explanatory variables.

$$P_t = 1/1 + e^{-X_t B}$$

Through the maximization of the likelihood function, the logit estimation finds the parameters B which are most likely to have produced the observed distribution of the data. In the trichotomous case, the logit procedure estimates the parameters for the conditional log of the odds for the first two categories relative to the third. For the present model, this means that there will be two equations estimating the parameters of voting sincerely versus abstention and voting strategically versus abstention:

$$\log(P_{\text{vote sincerely}}/P_{\text{abstain}}) = XB_1$$

$$\log(P_{\text{vote strategically}}/P_{\text{abstain}}) = XB_2$$

On the condition that $P_{\text{vote sincerely}} + P_{\text{vote strategically}} + P_{\text{abstain}} = 1$, the odds of the third outcome can be inferred.

The results of the logit estimations are shown in Table 2. The estimations confirm the expected utility hypothesis in the strategic vote case. In the sincere vote equation, the expected utility coefficient is, as predicted, positive, indicating that the individuals are more likely to vote for their first preferences as $P_1U_1 > P_2U_2$, but it is not significant by conventional statistical standards. On the other hand, the expected utility coefficient is negative and significant in the strategic vote equation, which means that individuals are more likely to vote for their second preferences as $P_1U_1 < P_2U_2$. The implication of this result, if true, is that sincere voters are motivated less by expected utility considerations than are strategic voters.

The revealed participation index was coded into two categories (1 = low participation, 2 = high participation), and both terms were entered into the equation in lieu of a constant term. Since the participation and interest coefficients are positive in the strategic vote equation and negative in the sincere vote equation, the coefficients on the high participation categories are smaller negative numbers in the sincere vote equation and larger positive numbers in the strategic vote equation. The differences in the participation coefficients across categories appear to be larger relative to their standard errors in the sincere vote equation than in the strategic vote equation, implying that participation utilities may be more important to the decision to vote sincerely. In the light of the weakness of the participation

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TABLE 2

A Logit Estimation of the Basic Voting Model, 1970

	Sincere Vote	Strategic Vote
Low Participation	−3.84	5.42
	(1.03)	(2.17)
High Participation	−2.84	6.28
	(1.04)	(2.20)
Alienation Measure	.035	.049
	(.007)	(.009)
Indifference Measure	.008	−.154
	(.006)	(.015)
Expected Utility Measure	.012	−.079
	(.009)	(.020)

measure, however, it is probably wise to be cautious in drawing inferences from this.

The alienation measure is significant and positive across both equations, but slightly larger in the strategic vote equation than in the sincere vote equation. This means that the higher the absolute level of an individual's first preference, the more likely it is that individuals will participate in the election. Conversely, the lower the level of an individual's first preference, the higher the alienation of that individual and the greater the probability of abstention. From the perspective of a spatial model, a higher level of alienation implies a greater distance between the issue positions of an individual and those of the closest party. As that distance increases, an individual will be less likely to participate even if there are perceived differences between the parties.

The indifference variable, like the expected utility measure, is significant in the strategic vote equation only. The negative sign indicates that as the differences in an individual's first and second preferences decrease, the probability of voting strategically will increase. Thus, quite apart from the perceived outcome, individuals will be more predisposed to vote sincerely as the difference in the assessment of the first preference increases over the assessment of the second, and to vote strategically as the difference de-

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creases. Since both the indifference and expected utility measures are significant in the strategic vote equations, it is necessary to speculate on the implications of this result for the expected utility versus minimax regret debate. Clearly, we have proof of strategic voting, and hence of utility maximizing behavior. The question is whether the indifference variable is significant because of the admitted weakness of the expected utility measure, or because utility differences have an independent effect apart from the expected outcome. The former can certainly not be ruled out, but even if the latter, the estimations indicate that any decision rule which precludes strategic voting is inadequate. The general picture emerging from these estimations is that the sincere voter relies more heavily on participation utilities and the absolute level of enthusiasm he/she has for a candidate. The choice of the strategic voter depends less on participation utilities and more on the relative comparison of alternatives.

Simulations with the Logit Model

It is not possible with OLS equations to get precise probability predictions for each of the outcomes. The estimated logits can, however, be converted into conditional probabilities. In each equation, we get the logarithm of the odds favoring the r^{th} response relative to the s^{th}—i.e., log P_r/P_s. Under the restraint that the sum of the probabilities equals 1, the absolute probabilities can be found with a simple set of arithmetic conversions.

How do changes in the parameters of the model affect the probabilities of various act alternatives? This point can be illustrated by changing the values of one variable at a time while holding constant the values of the others, and observing how the probabilities of voting sincerely, voting strategically, and abstaining change. The four basic conditions to be manipulated are as follows: changes in the difference between an individual's first and second preferences; high and low participation utilities; changes in the expected margin of contention of the first preference (i.e. p_1); and changes in the margin of contention of the second preference (i.e., p_2). For all four conditions, the base or initial values will be:

$$[U_1 = 50 \quad U_2 = 30 \quad P_1 = 20 \quad P_2 = 20 \quad D = \text{low}]$$

(a) *Altering the Level of Indifference*: The margin of preference between an individual's first and second preferences is the degree of indifference. As the level of an individual's first preference increases relative to that of the second preference, the probability of voting sincerely ought to in-

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crease. Moreover, as U_1 increases in value, the level of alienation will decrease as well, and the probability of abstention should also decrease. The computed probabilities show that as the margin $U_1 - U_2$ increases ceteris paribus from 20 to 40, the probability of voting sincerely increases from .32 to .54, and the probability of abstention decreases from .65 to .46. As the margin of preference becomes more extreme—i.e., 60 points—the probability of sincere voting becomes an overwhelming .74 and the probability of abstaining drops to .26.

$U_1 - U_2$	Sincere	Strategic	Abstain
40-30	.22	.08	.69
50-30	.32	.03	.65
70-30	.54	.00	.46
90-30	.74	.00	.26

(b) *High and Low Participation Utilities*: As the intrinsic utilities of participation are higher for any individual, the probability of voting rather than abstaining should increase. This simple point can be illustrated by switching from an individual in a low participaton category to one n a high participation category, but keeping all other initial values the same. The probability of voting sincerely rises substantially from .32 to .55, and that of abstention decreases from .65 to .41. The probability of strategic voting changes little since we have not altered the variables which would motivate such behavior—i.e., $U_1 - U_2$ and P_2.

	Sincere	Strategic	Abstain
Low Participation Utilities	.32	.03	.65
High Participation Utilities	.55	.04	.41

(c) *Changes in* P_1: The expected margin of contention of the first preference is the closeness of the race between an individual's first preference and the eventual constituency winner (or between the first preference and the runner-up in the constituency if the first preference party is the eventual winner). The closer the margin of contention, the higher the value of an individual's vote, and the greater the likelihood of voting. As the

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margin between the winner and the first preference increases, therefore, the value of voting sincerely ought to increase. At the base or initial value, $P_1 = P_2$, and the expected margin is 20 percent. If P_1 becomes 10 percent and P_2 remains 20 percent, the probability of voting sincerely will increase by .01. If P_1 becomes 1 percent, the probability of voting sincerely increases by .08 and that of abstaining decreases by .05. Thus, the most rapid change in probability appears to occur between the margins of 1 percent and 5 percent. In general, however, higher margins do not make large differences in the relative probabilities of act alternatives.

P_1	Sincere	Strategic	Abstain
20%	.32	.03	.65
10%	.33	.02	.65
5%	.34	.01	.65
1%	.40	.00	.60

(d) *Changes in P_2*: Changes in the expected margin of contention of the second preference are crucial to strategic voting. As the second preference is perceived to be more in contention than the first preference, the probability of voting strategically ought to increase. The fact that the probability of strategic voting will increase with closer margins for the second preference is evident from the table of probabilities. The amount of probability change is quite small at margins of 10 percent and 5 percent (where P_1 remains 20 percent), but is quite substantial at 1 percent—i.e., from .05 to .24 for strategic voting, .30 to .20 for sincere voting, and .65 to .56 for abstention.

The finding that the probability of voting strategically rises substantially at a margin of competitiveness of 1 percent is notable. A common reason for doubting whether voters choose strategically is that the impact of one vote in a large group will be negligible and thus the expected gain from such behavior will be small. The estimated probabilities suggest that voters will be motivated to vote tactically only when the race is extremely close. Given the moderate size of the British constituencies (i.e., an average of 64,000), a margin of 1 percent or less can mean that a relatively small number of voters (i.e., a few hundred) will decide the outcome. The belief that individuals can influence the outcome in very close elections may be more reasonable and widespread in Britain than critics of expected utility models typically presume.

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P_2	Sincere	Strategic	Abstain
20%	.32	.03	.65
10%	.32	.03	.65
5%	.30	.05	.65
1%	.20	.24	.56

Conclusion

This paper has attempted to formulate and estimate a model of strategic voting in the British electorate. The results are encouraging in the sense that the expected utility term in the survey test appears to be statisically significant, but clearly the difficulty of finding a measure that captures precisely individual expectations of the likely outcome makes it hard to formulate definitive tests of strategic voting. However, the additional evidence of a third-party squeeze in Britain and the intuitive appeal of the wasted vote concept suggest very strongly that voters do indeed make tactical choices and that theories that cannot account for this sort of behavior must be seriously questioned.

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